D					
C					
B					
A					
Indice Index	Data Date	Modificare Modification/Revision	Proiectant Designer	Aprobat Consultant Approved Consultant	Aprobat CFR Approved CFR

GUVERNUL ROMANIEI
ROMANIAN GOVERNMENT

PROIECT FINANȚAT DE UNIUNEA EUROPEANĂ
EUROPEAN UNION FINANCED PROJECT

CLIENT / CLIENT

C.N.C.F. "C.F.R." - S.A.

ITALFERR
GRUPPO FERROVIE DELLO STATO
Joint Venture leader

Scott Wilson

OBERMEYER
PLANEN + BERATEN GmbH

TECNIC
Consulting Engineers

CONSULTANT / CONSULTANT

			Data Date	Semnătură Signature
Aprobat Approved	Şef proiect Project manager	R. Liuzza		
Aprobat Approved	Coordonator Secțiune 1 Section 1 Coordinator	C. Gambelli		
Verificat Checked	Tunel Expert Tunnel Expert	C. Gambelli		
Întocmit Elaborated	Proiectant Designer	P. Amodio		

SUBCONSULTANT / SUBCONSULTANT

Aprobat Approved	Responsabil Subconsultant Subconsultant Responsible			
Întocmit Elaborated	Proiectant Designer			

Reabilitarea liniei de cale ferata Braşov - Simeria, parte componentă a coridorului IV Pan European, pentru circulația trenurilor cu viteza maximă de 160 km/h.
Sectiune 1 Brasov - Sighisoara

Rehabilitation of the railway line Braşov - Simeria, component Part of the IV Pan-European Corridor, for the trains circulation with maximum speed of 160 km/h.
Section 1 Brasov - Sighisoara

Proiect/Project
2004/RO/16/P/PA/003

Faza / Phase:
P.Th. / T.D.

Denumire desen / Drawing Title : **TUNNEL/TUNELUL HOMOROD**
RACOS SIDE/INSPRE RACOS

Safety Tunnel Power Supply system /Sistem de alimentare de siguranță a tunelul
Single-line diagrams low-voltage electrical panels Q_BT/Diagrame single-line cadru electrice joasa tensiune Q_BT/PE

Codificare / Codification System	Scara / Scale	LOT	Nr. / No
	-		

E	A	5	1	0	1	C	1	2	L	X	T	S	2	0	7	6	0	0	3	0

ELECTRICAL CHARACTERISTICS/ CARACTERISTICILE ELECTRICE

RATED INSULATION VOLTAGE/TENSIUNEA NOMINALA DE IZOLARE	1000 V
RATED WORKING VOLTAGE/TENSIUNE DE LUCRU NOMINALA	400/230 V
NOMINAL FREQUENCY/FRECVENTA NOMINALA	50 Hz
ELECTRICAL SYSTEM/SISTEMUL ELECTRIC	TN-S
MAXIMUM SHORT CIRCUIT CURRENT ALLEGED/MaximA Curent de scurt circuitului PRESUPUSA	15 kA
MAXIMUM SHORT CIRCUIT CURRENT ALLEGED/MaximA Curent de scurt circuitului PRESUPUSA	
RATED CURRENT (BAR MAIN)/CURENT NOMINAL (BARUL PRINCIPAL)	400 A
ACCEPTABLE RATED CURRENT/CURENT NOMINAL ACCEPTABIL SHORT FOR 1 SEC./SCURT PENTRU 1 SEC.	105 kA
RATED CURRENT/CURENT NOMINAL ALLOWABLE PEAK/ADMISIBILE PEAK	254 kA
NOMINAL VOLTAGE AUXILIARY CIRCUITS/ TENSIUNEA NOMINAL CIRCUITELOR AUXILIARE	230 Vac / 24 Vdc
TEST VOLTAGE/TENSIUNE DE TESTARE A 50 HZ FOR 1 MIN./A 50 HZ PENTRU 1 MIN. — CIRCUITS OF POWER/ CIRCUITE DE PUTERE	2500 V
TEST VOLTAGE/TENSIUNE DE TESTARE A 50 HZ FOR 1 MIN./A 50 HZ PENTRU 1 MIN. — AUXILIARY CIRCUITS/ CIRCUITELOR AUXILIARE	1500 V
IMPULSE WITHSTAND VOLTAGE/TENSIUNE DE REZISTA LA IMPULS	8 kV

TESTING/TESTAREA SEC. CEI 17-113

- [X] INDIVIDUAL TESTS/TESTE INDIVIDUALE
- [ ] TYPE TESTS/TESTE DE TIP

MECHANICAL CHARACTERISTICS/ CARACTERISTICILE MECANICE

FORM OF SEGREGATION/FORMA DE SEGREGARE	3A
CARPENTRY/TAMPLARIE — MATERIAL/MATERIALE	ACCIAIO ZINCATO E VERNICIATO
CARPENTRY/TAMPLARIE — EXTERIOR PANEL THICKNESS/ GROSIMEA PANOULUI EXTERIOR	15/10 mm
DEGREE OF PROTECTION/ GRAD DE PROTECTIE — IP41	ON THE EXTERNAL INVOLUCRE/ PE EXTERIOR LOCUINTE
DEGREE OF PROTECTION/ GRAD DE PROTECTIE — IP20	WITHIN THE PANEL AT OPEN DOORS/ ÎN CADRULA UN DESCHISE USI
PANEL ACCESSIBILITY/ACCES CADRU — FRONT/FATA	SI
PANEL ACCESSIBILITY/ACCES CADRU — BACK/INAPOI	NO
PANEL ACCESSIBILITY/ACCES CADRU — SIDE/LATERALE	SI
EXPANDABLE PANEL/EXTENSIBIL CADRU — RIGHT SIDE/PARTEA DREAPTA	SI
EXPANDABLE PANEL/EXTENSIBIL CADRU — LEFT SIDE/PARTEA STÂNGA	SI
FUND/PARTEA INFERIOARA	FONDO CHIUSO/BOTOLA ASPORTABILE
FRAME OR BASIC IRON/ FRAME SAU FIER DE BASE	ACCIAIO ZINCATO

POWER/PUTERE	ARRIVALS/SOSIRI	HIGH/TOPURI [X]	LOW/JOASA [X]	CAVO
POWER/PUTERE	DEPARTURES/PLECARI	HIGH/TOPURI [X]	LOW/JOASA [X]	CAVO
AUXILIARIES/ AUXILIARE	ENTRY/INTRARE	HIGH/TOPURI [X]	LOW/JOASA [X]	CAVO
AUXILIARIES/ AUXILIARE	OUTPUT/IESIRE	HIGH/TOPURI [X]	LOW/JOASA [X]	CAVO

PAINTING/PICTURA (CYCLE NORMALIZED TGN-001)/ (CICLUL NORMALIZAT TGN-001) SPESS. MIN. 50 MICRON ±10% [X]

EXTERNAL PANEL/ EXTERNE CADRU	RAL 7035
INTERNAL PANEL/ INTERN CADRU	

OVERALL DIMENSIONS (mm)/ DIMENSIUNI DE GABARIT (mm): 3950 LX 2231 HX 637 P

SUBDIVISION SECTIONS/COMPARTIMENTARE SECTIUNI

TOTAL MASS/TOTALE MASA — KG.

CONDITIONS OF SERVICE CONDITII DE SERVICE

TEMPERATURE MAX./TEMPERATURA MAX.	+40°C
MEDIA AMBIENT TEMPERATURE/TEMPERATURII ÎN CAMERA MEDIA	
MINIMUM AMBIENT TEMPERATURE/TEMPERATURA IN CAMERA MINIMA	-5°C
RELATED HUMIDITY MAX/UMIDITATE RELATIVA MAX	83% (23°C)
ALTITUDE ABOVE SEA LEVEL/ALTITUDINEA	<1000 mt
PRESSURE-DEPRESSION/PRESIUNE-DEPRESIA	

COMPLIANCE WITH REGULATIONS/RESPECTAREA REGLEMENTARILOR

CEI ITALIANE	17-113 / EN61439
IEC INTERNAZIONALI	61439-1
OTHERS/ALTE	

SPECIFIC DESCRIPTION/DESCRIERE SPECIFICA:

SBARRE PRINCIPALI E DERIVATE
- IN PIATTO DI RAME E/O ALLUMINIO
- ISOLAMENTO IN ARIA

SBARRA DI TERRA
- SEZIONE MINIMA 150 mmq

NOTE

CAVETTERIA PER CIRCUITI AUSILIARI:
- TIPO N07G9-K
- CAVETTERIA DI COLORE NERO

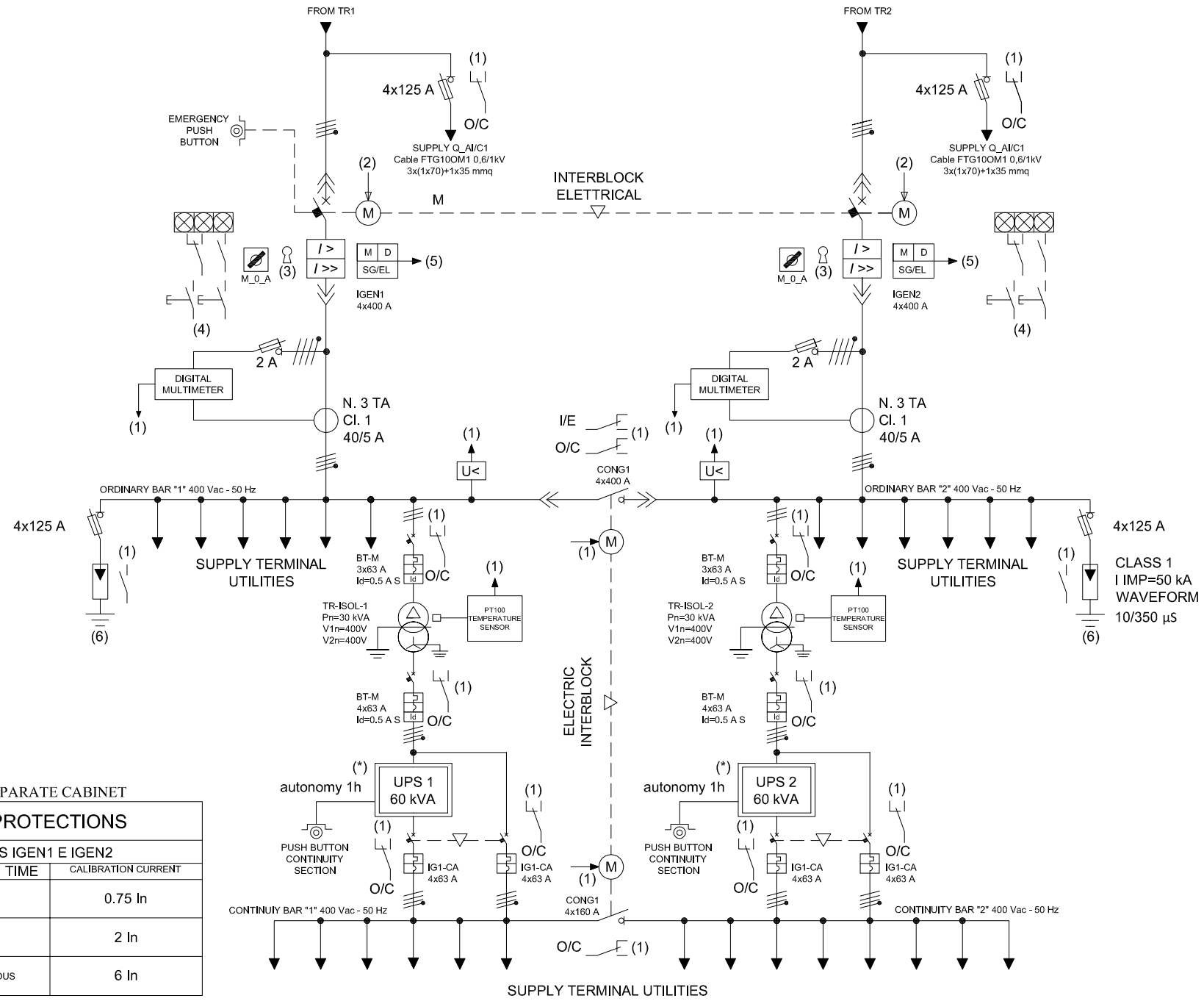
SEZIONI:
- CIRCUITI AMPEROMETRICI/VOLTMETRICI >= 2.5 mmq
- CIRCUITI DI COMANDO >= 1.5 mmq
- CIRCUITI DI SEGNALAZIONE >= 1.5 mmq

NOTES NUMBER (SEE SUBSEQUENT SHEETS)
(1) SIGNAL OR COMMAND FROM–TO SUPERVISION SYSTEM
(2) INTERLOCK WITH RELATIVE SWITCH MV
(3) BUTTON BLOCK WITH LOCK
(4) BUTTON SWITCH OPENING AND CLOSING:
· THE IGEN1 IGEN2 SWITCHES WILL BE ELECTRICAL INTERLOCKED SO ALLOW ONLY THE TEMPORARY PARALLEL BETWEEN TR1 AND TR2
· THE MOTORIZED SWITCHES MAY BE CONTROLLED BY THE SUPERVISION SYSTEM
(5) RS485 SERIAL COMMUNICATION SYSTEM TO SUPERVISION
(6) THE LINKS BETWEEN THE SPD AND COLLECTOR TO LAND OF THE PANELS SHOULD HAVE A LENGTH LESS OR EQUAL TO 0.5 M
(7) OPERATED BY LOCAL TEMPERATURE PROBE

KEY TO ABBREVIATIONS:
– Ib: OPERATING CURRENT, CALCULATED ACCORDING TO THE SIZE OF POWER [A]
SWITCH
– In: PROTECTION OF RATED CURRENT [A]
– Ith: SETTING THE CURRENT RESPONSE THERMAL PROTECTION [A]
– Idn: CALIBRATION OF DIFFERENTIAL CURRENT [A]
– Im: CALIBRATION OF MAGNETIC ACTION OF THE PROTECTION OF CURRENT [A]
CONTACTOR
– In: CONTACTOR SIZE [A]
– Pn: SCOPE OF CONTACTOR [kW]
TA
– I1n/I2n: CONVERSION RATIO OF CURRENT [A / A]
TV
– V1n/V2n: CONVERSION RATIO OF NOMINAL [v / v]
POWER LINE
– Iz: PERMISSIBLE CURRENT CABLE, CALCULATED ON THE BASIS OF FLOW RATE AND COEFFICIENTS DERATING ARISING FROM THE INSTALLATION MODE [A]
– Cdt in Ib: PARTIAL LOSS OF POWER (PIPELINE DUE TO USERS ONLY) AND THE CURRENT Ib cosj NOMINAL [%]
– Cdt tot. in Ib: DROP VOLTAGE TOTAL (FROM THE VALLEY TO THE PROVISION OF USERS) AND THE CURRENT Ib cosj NOMINAL [%]
– Zk: MINIMUM IMPEDANCE FAULT OR THREE–PHASE NEUTRAL DOWNSTREAM USERS [mW]
– Zs: Minimal impedance of phase–earth fault DOWNSTREAM USERS [mW]
– Ik trifas. / SINGLE–PHASE.: MAXIMUM SHORT CIRCUIT CURRENT PHASE PERMANENT NEUTRAL–PHASE OR DOWNSTREAM USERS [kA]
– Ik1 phase / earth: MAXIMUM SHORT CIRCUIT CURRENT PHASE–GROUND DOWNSTREAM USERS [kA]

NOTE NUMĂRUL (VEZI FIŞELE ULTERIOARE)
(1) SEMNAL SAU DE COMANDĂ DE LA LA–SISTEM DE SUPRAVEGHERE
(2) INTERBLOCARE CU VM SWITCH RELATIVE
(3) BLOCUL BUTON CU LOCK
(4) SWITCH DESCHIDERE BUTTON ŞI DE ÎNCHIDERE:
¨ IGEN1 SWITCHES IGEN2 VOR FI ELECTRICE INTERBLOCATĂ PERMIT ACEST LUCRU NUMAI PARALEL TEMPORARE DINTRE TR1 ŞI TR2
¨ COMUTATOR MOTORIZAT POATE FI CONTROLATĂ PRIN SISTEMUL DE SUPRAVEGHERE
(5) SISTEM DE COMUNICAŢII RS485 SERIAL DE SUPRAVEGHERE
(6) LEGĂTURILE DINTRE SPD ŞI COLECTORUL DE PE SOL A PANOURI TREBUIE SĂ AIBĂ O LUNGIME MAI MICĂ SAU EGALĂ CU 0,5 M
(7) OPERATE DE SONDA DE TEMPERATURA LOCAL

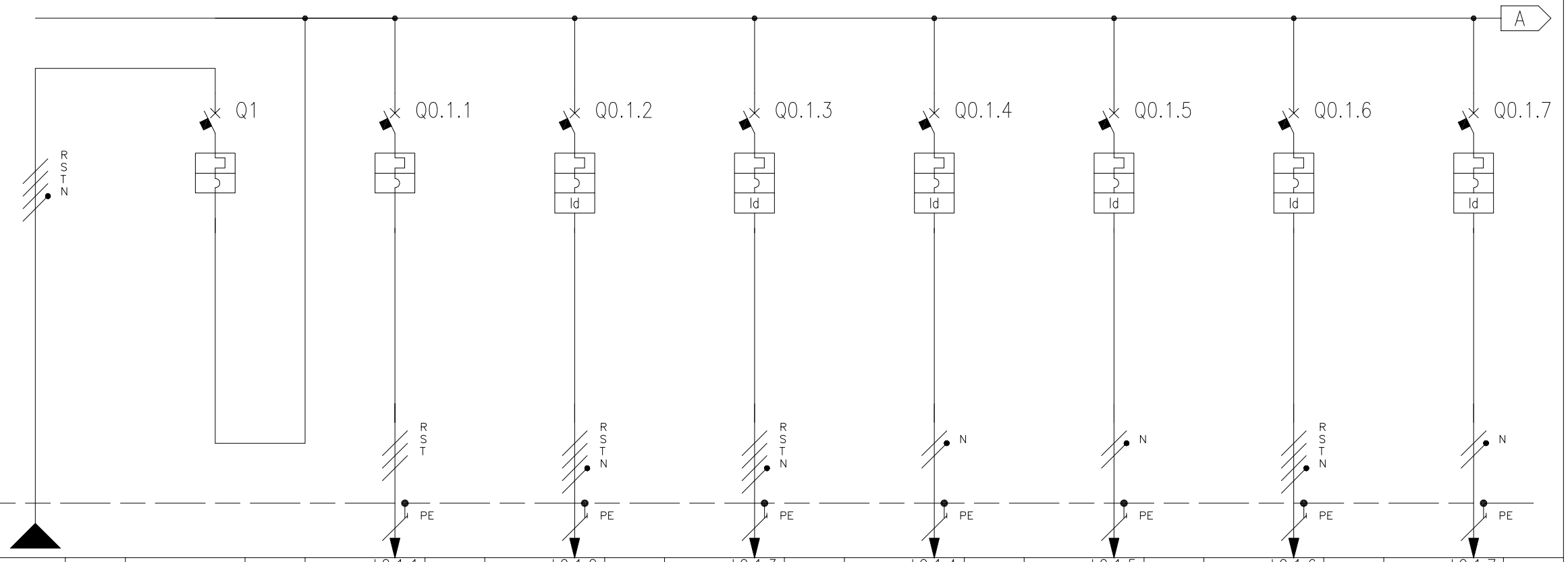
CHEIA ABREVIERI:
– Ib: Curent de operare, calculat în conformitate cu DIMENSIUNEA DE PUTERE [A]
SWITCH
– În: PROTECŢIA A Curent nominal [A]
– Ith: STABILIRE PROTECŢIA RĂSPUNS ACTUAL termică [A]
– Idn: CALIBRAREA DIFERENTIAL curent [A]
– Im: CALIBRAREA DE ACŢIUNE MAGNETICE DE PROTECŢIE A curent [A]
CONTACTOR
– În: SIZE CONTACTOR [A]
– Pn: DOMENIUL DE APLICARE A CONTACTOR [kW]
TA
– I1n/I2n: rata de conversie a curentului [A / A]
televizor
– V1n/V2n: rata de conversie nominală de [v / v]
POWER LINE
– Iz: CABLU ADMISE CURENT, calculată pe baza debitului şi coeficienţii de declasare REZULTATE DIN MODUL DE INSTALARE [A]
– Cdt în Ib: pierderi parţiale de putere (PIPELINE CAUZA utilizatorilor numai), iar curentul Ib cosj NOMINALE [%]
– Cdt tot. în Ib: tensiunea totală DROP (DIN vale la dispoziţie de utilizatori) şi curentul Ib cosj NOMINALE [%]
– ZK: FAULT impedanta MINIMUM sau trei faze UTILIZATORI NEUTRE DOWNSTREAM [mW]
– Zs: impedanta minima de fază–pământ vina DOWNSTREAM Utilizatori [mW]
– Trifas Ik / SINGLE–PHASE: MAXIM Curent de scurt CIRCUIT FAZA utilizatori permanenti NEUTRE–FAZA sau în aval [kA]..
– Ik1 faza / pământ: maximă a circuitului, Curent de scurt FAZA–SOL UTILIZATORII DIN AVAL [kA]



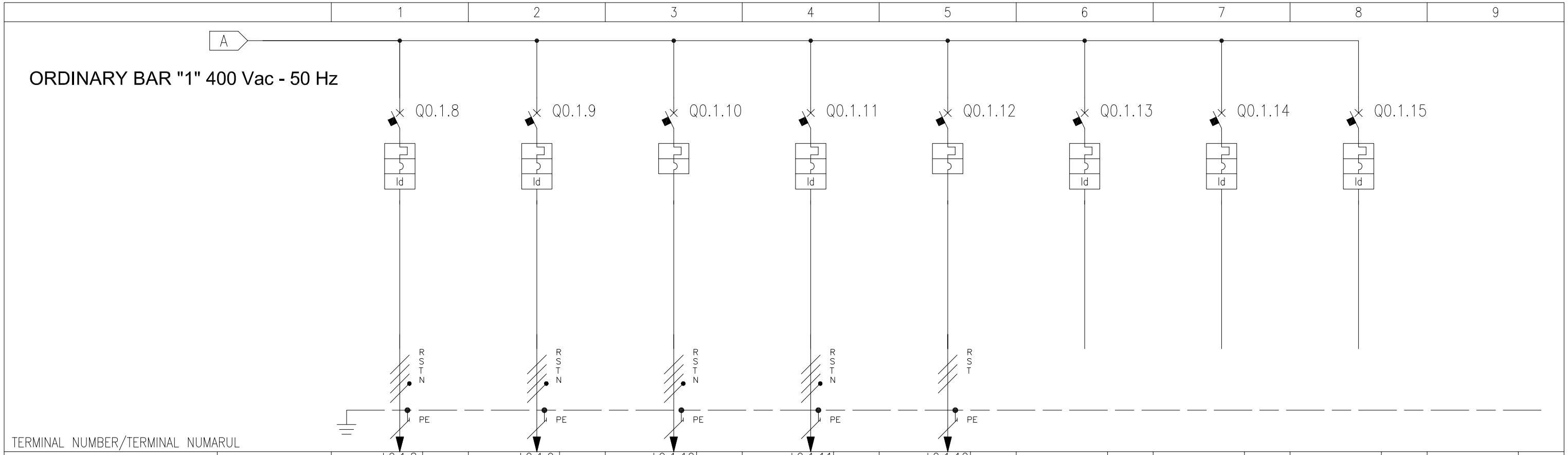
(*) DEVICE INSTALLED IN A SEPARATE CABINET

CALIBRATION PROTECTIONS		
CIRCUIT BREAKERS IGEN1 E IGEN2		
THRESHOLD	CALIBRATION TIME	CALIBRATION CURRENT
LONG DELAY (L)	3s	0.75 In
SHORT DELAY (S)	0.5s	2 In
INSTANTANEOUS (I)	INSTANTANEOUS	6 In

ORDINARY BAR "1" 400 Vac - 50 Hz

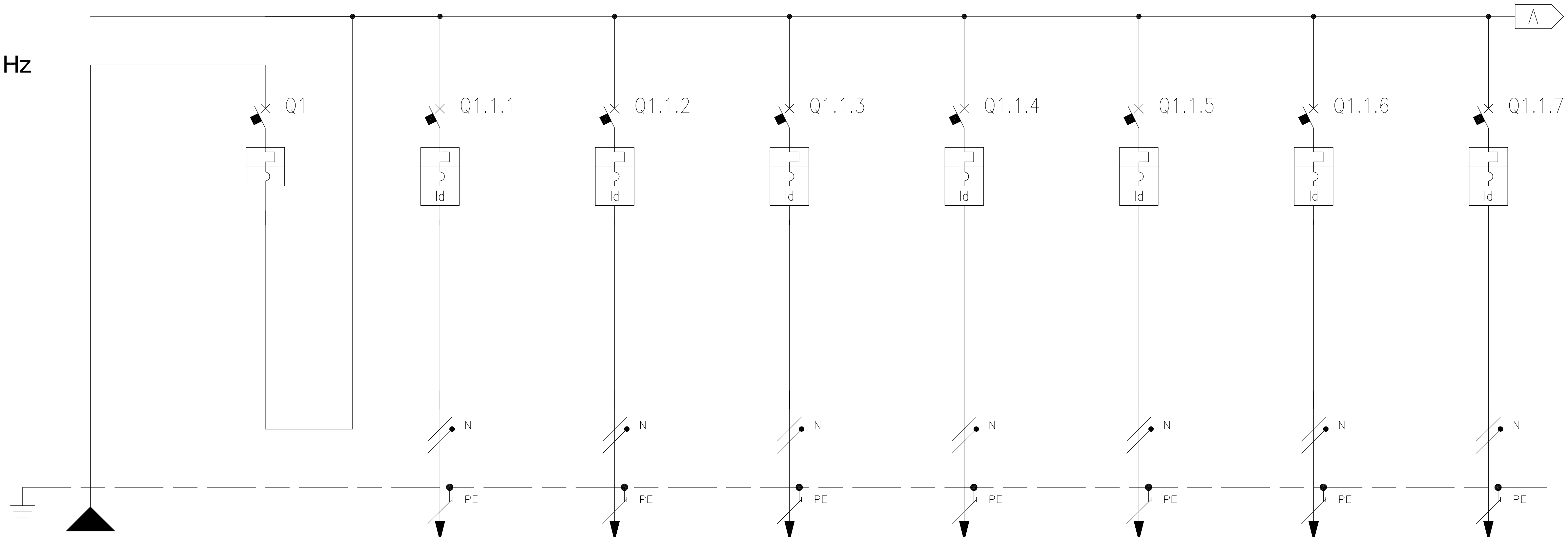


			1	2	3	4	5	6	7	8	9
TERMINAL NUMBER/TERMINAL NUMARUL											
NUMBER OF CIRCUIT NUMARUL DE CIRCUIT	DISTRIBUTION DISTRIBUTION		RSTNPE	1	L0.1.1 2 RSTPE	L0.1.2 3 RSTNPE	L0.1.3 4 RSTNPE	L0.1.4 5 RNPE	L0.1.5 6 RNPE	L0.1.6 7 RSTNPE	L0.1.7 8 RNPE
DESCRIPTION OF THE CIRCUIT DESCRIREA A CIRCUITULUI			AE1 ARRIVAL FROM QMT_PE		AL1 FIRE PROTECTION PANEL	AL2 FIRE BRIBAGE SOCKETS SAFE AREA PANEL	AL3 WAREHOUSE + DISTRU. ROOM LIGHTING	AL4 WAREHOUSE + DISTRU. SOCKETS	AL5 MV ROOMS LIGHTING	AL6 MV ROOMS SOCKETS	AL7 RADIO AND LV ROOMS LIGHTING
TYPE APPARATUS/TIP APARATURA				NSX400 N	C60 H	C60 L	C60 L	C60 H	C60 H	C60 L	C60 H
SWITCH/SWITCH	Icu [kA]			50	15	25	25	30	30	25	30
	N. POLI	In [A]		4P 400	3P 63	4P 25	4P 10	2P 16	2P 10	4P 16	2P 10
	CURVE RELEASES/CURBA DE PRESA			MicroL2.3	C	C	C	C	C	C	C
	Ir [A]	tr [s]		171 0,95x	63	25	10	16	10	16	10
	Isd [A]	tsd [s]		1710 10x	630	250	100	160	100	160	100
	Ii [A]										
	Ig [A]	tg [s]									
DIFFERENTIAL DIFERENTIAL	TYPE/TIP	CLASS/CLASA				Vigi A si	Vigi AC	Vigi AC	Vigi AC	Vigi AC	Vigi AC
	Idn [A]	tdn [ms]				0,03 instant.	0,03 instant.	0,03 instant.	0,03 instant.	0,03 instant.	0,03 instant.
CONTACTOR	TYPE/TIP	CLASS/CLASA									
CONTACTOR	COIL [V]	N. POLE In [A]									
TERMIC	TYPE/TIP	Irth [A]									
FUSE	N.POLE	In [A]									
OTHER APP.	TYPE/TIP	MODEL									
PIPELINE/ PIPELINE	TYPE ISOLATION	POSE/INSTALAREA	EPR 13		EPR 13	EPR 13	EPR 13	EPR 13	EPR 11	EPR 13	EPR 11
	SECTION PHASE-N-PE/PEN [mmq]		1x240 1x240 1x240		1x35 1x16	1x6 1x6 1x6	1x2,5 1x2,5 1x2,5	1x4 1x4 1x4	1x2,5 1x2,5 1x2,5	1x4 1x4 1x4	1x2,5 1x2,5 1x2,5
	Ib [A]	Iz [A]	169,3 634		21,3 176	14,4 58	0,5 32	1,9 49	4,4 33	3,6 42	4,4 33
	Un [V]	Pn [kW]	400		400 11,8	400 8	400 0,25	230 0,4	230 0,9	400 2	230 0,9
BOTTOM LINE/ FUND LINE	Icc min [kA]	Icc max [kA]	7,8 9,8		4,6 6,8	0,1 0,4	0,4 1,2	0,6 1,6	0,5 1,3	0,8 2,2	0,6 1,6
	LENGHT/LUNGIMEA[m]	dV TOTAL [%]	5 0,1		25 0,2	200 3,9	25 0,1	25 0,3	20 0,7	20 0,2	15 0,5
NOTE											

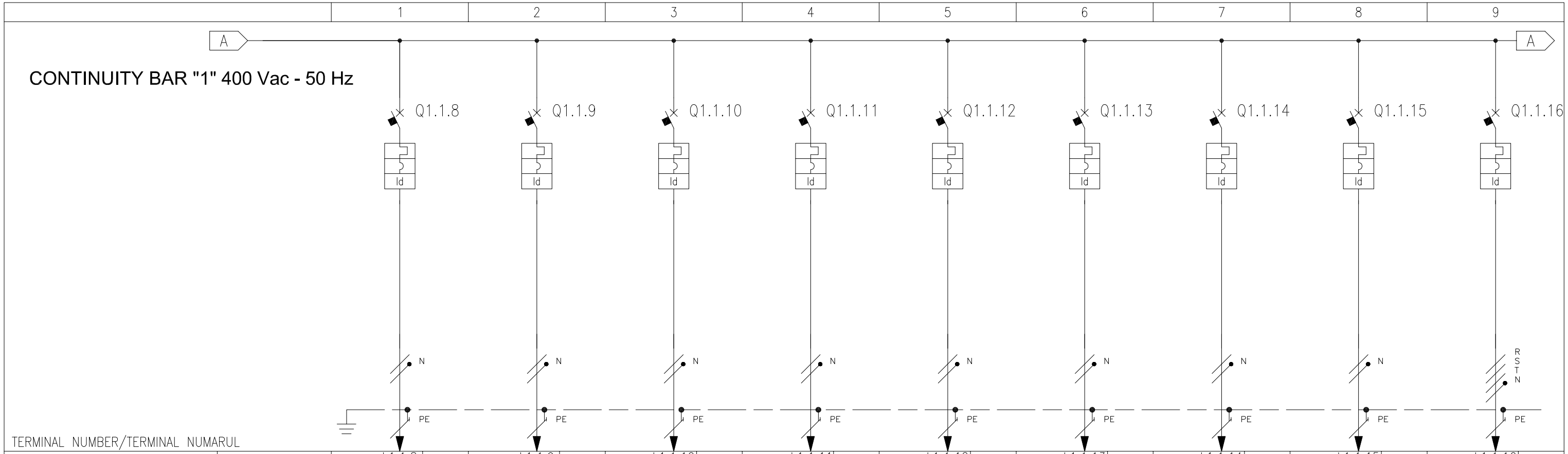


		1	2	3	4	5	6	7	8	9
TERMINAL NUMBER/TERMINAL NUMARUL		L0.1.8	L0.1.9	L0.1.10	L0.1.11	L0.1.12				
NUMBER OF CIRCUIT / NUMARUL DE CIRCUIT	DISTRIBUTION / DISTRIBUTION	9 RSTNPE	10 RSTNPE	11 RSTNPE	12 RSTNPE	13 RSTPE	14 RSTNPE	15 RSTNPE	16 RSTNPE	
DESCRIPTION OF THE CIRCUIT / DESCRIREA A CIRCUITULUI		AL8 LV ROOMS SOCKETS AND RADIOCOM.	AL9 POWER SUPPLY IS EQUIPMENT	AL10 MEDICAL CARE BUILDING PANEL	AL11 UPS POWER SUPPLY	AL12 POWER FACTOR CORRECTION PANEL 1	RESERVE	RESERVE	RESERVE	
TYPE APPARATUS/TIP APARATURA		C60 L	NG125 N	NG125 N	NG125 N	NG125 N	C60 L	C60 L	C60 L	
SWITCH/SWITCH	Icu [kA]	25	25	25	25	25	25	25	25	
	N. POLI / In [A]	4P / 16	4P / 100	4P / 32	4P / 50	3P / 100	4P / 10	4P / 10	4P / 10	
	CURVE RELEASES/CURBA DE PRESA	C	C	C	C	D	C	C	C	
	Ir [A] / tr [s]	16 /	100 /	32 /	50 /	100 /	10 /	10 /	10 /	
	Isd [A] / tsd [s]	160 /	1000 /	320 /	500 /	1400 /	100 /	100 /	100 /	
	Ii [A]									
	Ig [A] / tg [s]	/	/	/	/	/	/	/	/	
DIFFERENTIAL / DIFERENTIAL	TYPE/TIP / CLASS/CLASA	Vigi / AC	Vigi / A si	/	Vigi / AC	/	Vigi / A si	Vigi / A si	Vigi / A si	
	Idn [A] / tdn [ms]	0,03 / instant.	0,3 / instant.	/	0,03 / instant.	/	0,03 / instant.	0,03 / Istantaneo	0,03 / Istantaneo	
CONTACTOR	TYPE/TIP / CLASS/CLASA	/	/	/	/	/	/	/	/	
CONTACTOR	COIL [V] / N. POLE / In [A]	/ /	/ /	/ /	/ /	/ /	/ /	/ /	/ /	
TERMIC	TYPE/TIP / Irth [A]	/	/	/	/	/	/	/	/	
FUSE	N.POLE / In [A]	/	/	/	/	/	/	/	/	
OTHER APP.	TYPE/TIP / MODEL	/	/	/	/	/	/	/	/	
PIPELINE/ PIPELINE	TYPE ISOLATION / POSE/INSTALAREA	EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13	/	/	/	
	SECTION PHASE-N-PE/PEN [mmq]	1x4 / 1x4 / 1x4	1x25 / 1x25 / 1x16	1x10 / 1x10 / 1x10	1x35 / 1x35 / 1x16	1x25 / / 1x16	/ /	/ /	/ /	
	Ib [A] / Iz [A]	3,3 / 42	82,5 / 141	30,8 / 80	49,6 / 176	80,8 / 141	/	/	/	
	Un [V] / Pn [kW]	400 / 1,8	400 / 40	400 / 17,92	400 /	400 /	/	/	/	
BOTTOM LINE/ FUND LINE	Icc min [kA] / Icc max [kA]	1 / 2,8	3,9 / 7,3	0,4 / 1,2	6,4 / 9,1	5,6 / 8	/	/	/	
	LENGHT/LUNGIMEA[m] / dV TOTAL [%]	15 / 0,2	15 / 0,4	100 / 2,7	5 / 0,1	10 / 0,4	/	/	/	
NOTE										

CONTINUITY BAR "1" 400 Vac - 50 Hz

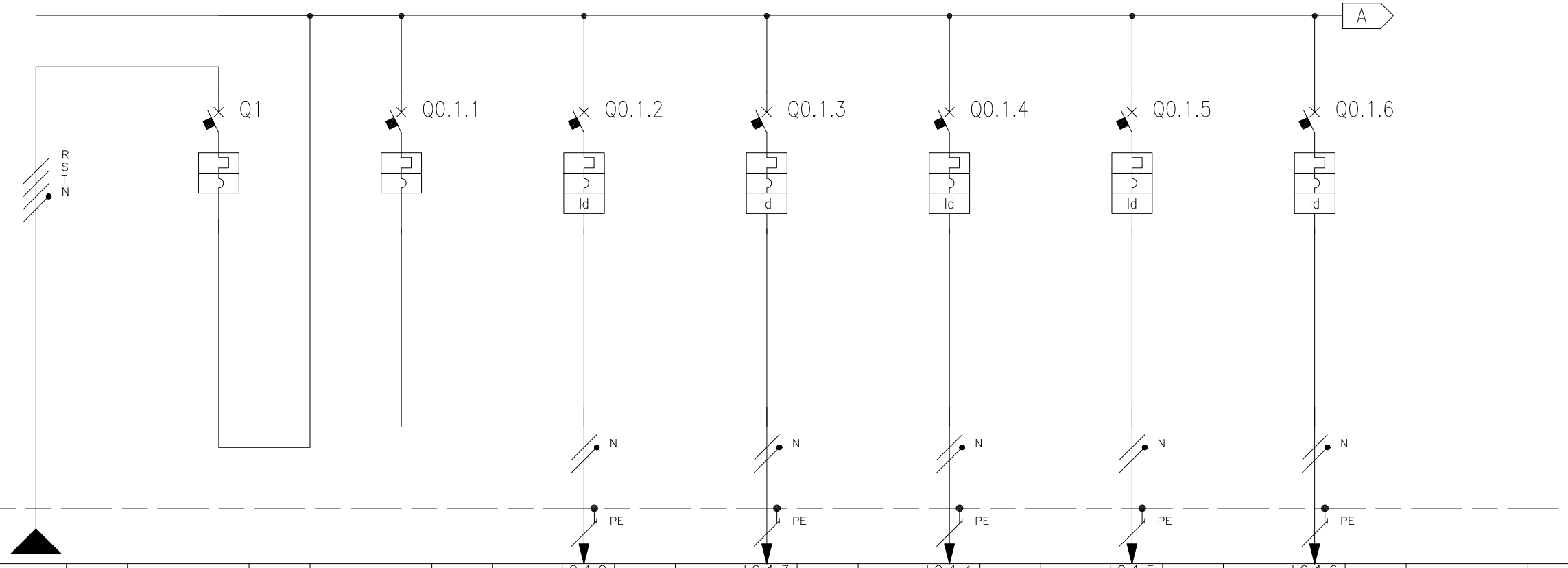


		1	2	3	4	5	6	7	8	9
TERMINAL NUMBER/TERMINAL NUMARUL				L1.1.1	L1.1.2	L1.1.3	L1.1.4	L1.1.5	L1.1.6	L1.1.7
NUMBER OF CIRCUIT / NUMARUL DE CIRCUIT	DISTRIBUTION / DISTRIBUTION	RSTNPE	1	2 / SNPE	3 / SNPE	4 / RNPE	5 / RNPE	6 / SNPE	7 / SNPE	8 / RNPE
DESCRIPTION OF THE CIRCUIT / DESCRIREA A CIRCUITULUI		AE1 FROM UPS		ALC1 SECURITY-FIRE PROTET UNIT	ALC2 POWER SUPPLY Q_MT AUX	ALC3 POWER SUPPLY Q_BT AUX	ALC4 POWER SUPPLY QdP AUX	ALC5 SUPERVISOR SERVER SUPPLY 1	ALC6 EMERGENCY PHONES SERVER IPBOX	ALC7 POWER SUPPLY TELEPH. EMER. + DS
TYPE APPARATUS/TIP APARATURA			NG125 N	C60 N	C60 N	C60 N	C60 N	C60 N	C60 N	C60 N
SWITCH/SWITCH	Icu [kA]		25	20	20	20	20	20	20	20
	N. POLI / In [A]		4P / 63	2P / 6	2P / 16	2P / 16	2P / 10	2P / 10	2P / 10	2P / 10
	CURVE RELEASES/CURBA DE PRESA		C	C	C	C	C	C	C	C
	Ir [A] / tr [s]		63	6	16	16	10	10	10	10
	Isd [A] / tsd [s]		630	60	160	160	100	100	100	100
	Ii [A]									
	Ig [A] / tg [s]									
DIFFERENTIAL / DIFERENTIAL	TYPE/TIP / CLASS/CLASA			Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si
	Idn [A] / tdn [ms]			0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.
CONTACTOR	TYPE/TIP / CLASS/CLASA									
CONTACTOR	COIL [V] / N. POLE / In [A]									
TERMIC	TYPE/TIP / Irth [A]									
FUSE	N.POLE / In [A]									
OTHER APP.	TYPE/TIP / MODEL									
PIPELINE/ PIPELINE	TYPE ISOLATION / POSE/INSTALAREA			EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13
	SECTION PHASE-N-PE/PEN [mmq]			1x2,5 / 1x2,5 / 1x2,5	1x2,5 / 1x2,5 / 1x2,5	1x2,5 / 1x2,5 / 1x2,5	1x2,5 / 1x2,5 / 1x2,5	1x2,5 / 1x2,5 / 1x2,5	1x2,5 / 1x2,5 / 1x2,5	1x2,5 / 1x2,5 / 1x2,5
	Ib [A] / Iz [A]			0,5 / 36	13,6 / 37	7,1 / 37	4,2 / 37	3,3 / 37	5,7 / 37	2,7 / 37
	Un [V] / Pn [kW]			230 / 0,1	230 / 2,5	230 / 1,3	230 / 0,96	230 / 0,5	230 / 0,85	230 / 0,4
BOTTOM LINE/ FUND LINE	Icc min [kA] / Icc max [kA]	9,1		0,6 / 1,6	0,5 / 1,3	4,2 / 6,6	0,6 / 1,6	0,6 / 1,6	0,6 / 1,6	0,6 / 1,6
	LENGHT/LUNGIMEA[m] / dV TOTAL [%]			15 / 0,2	20 / 1,8	1 / 0,2	15 / 0,6	15 / 0,4	15 / 0,6	15 / 0,3
NOTE										

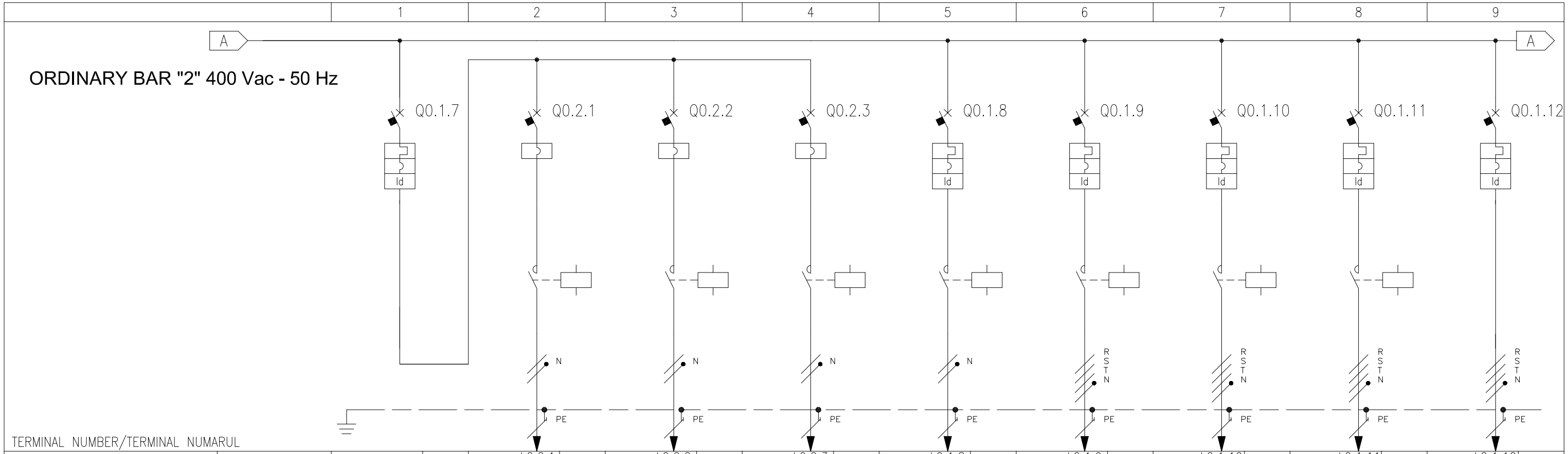


		1	2	3	4	5	6	7	8	9
TERMINAL NUMBER/TERMINAL NUMARUL										
NUMBER OF CIRCUIT / NUMARUL DE CIRCUIT	DISTRIBUTION / DISTRIBUTION	L1.1.8 9	L1.1.9 10	L1.1.10 11	L1.1.11 12	L1.1.12 13	L1.1.13 14	L1.1.14 15	L1.1.15 16	L1.1.16 17
		SNPE	RNPE	TNPE	SNPE	TNPE	RNPE	TNPE	TNPE	RSTNPE
DESCRIPTION OF THE CIRCUIT / DESCRIREA A CIRCUITULUI		ALC8 SERVER PCA VIDEO ANALISYS	ALC9 DEVICES GSM/UMTS 1	ALC10 DEVICES GSM-R GSM-R E STSI 1	ALC11 SUPERVISION MV 1	ALC12 FIRE PROTECTION CENTRAL	ALC13 RECTIFIER 230Vac/24Vcc	ALC14 AUXILIARY Q_SI	ALC15 AUXILIARY Q_AI	ALC16 ELECTRICAL PANEL Q_EL
TYPE APPARATUS/TIP APARATURA		C60 N	C60 N	C60 N	C60 N	C60 N	C60 N	C60 N	C60 N	C60 L
SWITCH/SWITCH	Icu [kA]	20	20	20	20	20	20	20	20	25
	N. POLI / In [A]	2P / 10	2P / 25	2P / 50	2P / 10	2P / 10	2P / 10	2P / 10	2P / 10	4P / 10
	CURVE RELEASES/CURBA DE PRESA	C	C	C	C	C	C	C	C	C
	Ir [A] / tr [s]	10	25	50	10	10	10	10	10	10
	Isd [A] / tsd [s]	100	250	500	100	100	100	100	100	100
	Ii [A]									
	Ig [A] / tg [s]									
DIFFERENTIAL / DIFERENTIAL	TYPE/TIP / CLASS/CLASA	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si	Vigi / A si
	Idn [A] / tdn [ms]	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.	0,03 / instant.
CONTACTOR	TYPE/TIP / CLASS/CLASA									
CONTACTOR	COIL [V] / N. POLE / In [A]									
TERMIC	TYPE/TIP / Irth [A]									
FUSE	N.POLE / In [A]									
OTHER APP.	TYPE/TIP / MODEL									
PIPELINE/ PIPELINE	TYPE ISOLATION / POSE/INSTALAREA	EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13	EPR / 13
	SECTION PHASE-N-PE/PEN [mmq]	1x4 / 1x4 / 1x4	1x6 / 1x6 / 1x6	1x16 / 1x16 / 1x16	1x4 / 1x4 / 1x4	1x4 / 1x4 / 1x4	1x16 / 1x16 / 1x16	1x2,5 / 1x2,5 / 1x2,5	1x2,5 / 1x2,5 / 1x2,5	1x10 / 1x10 / 1x10
	Ib [A] / Iz [A]	6,7 / 50	6,7 / 64	40,1 / 119	3,3 / 50	0,8 / 50	7,1 / 119	1,6 / 37	1,6 / 37	5,9 / 80
	Un [V] / Pn [kW]	230 / 1	230 / 1	230 / 6	230 / 0,5	230 / 0,15	230 / 1,06	230 / 0,3	230 / 0,3	400 / 3,7
BOTTOM LINE/ FUND LINE	Icc min [kA] / Icc max [kA]	1 / 2,4	1,3 / 3,1	2,7 / 5,2	1 / 2,4	1 / 2,4	2,7 / 5,2	0,4 / 1	0,4 / 1	0,4 / 1,2
	LENGHT/LUNGIMEA[m] / dV TOTAL [%]	15 / 0,4	15 / 0,3	15 / 0,6	15 / 0,3	15 / 0,2	15 / 0,2	25 / 0,4	25 / 0,4	100 / 0,6
NOTE										

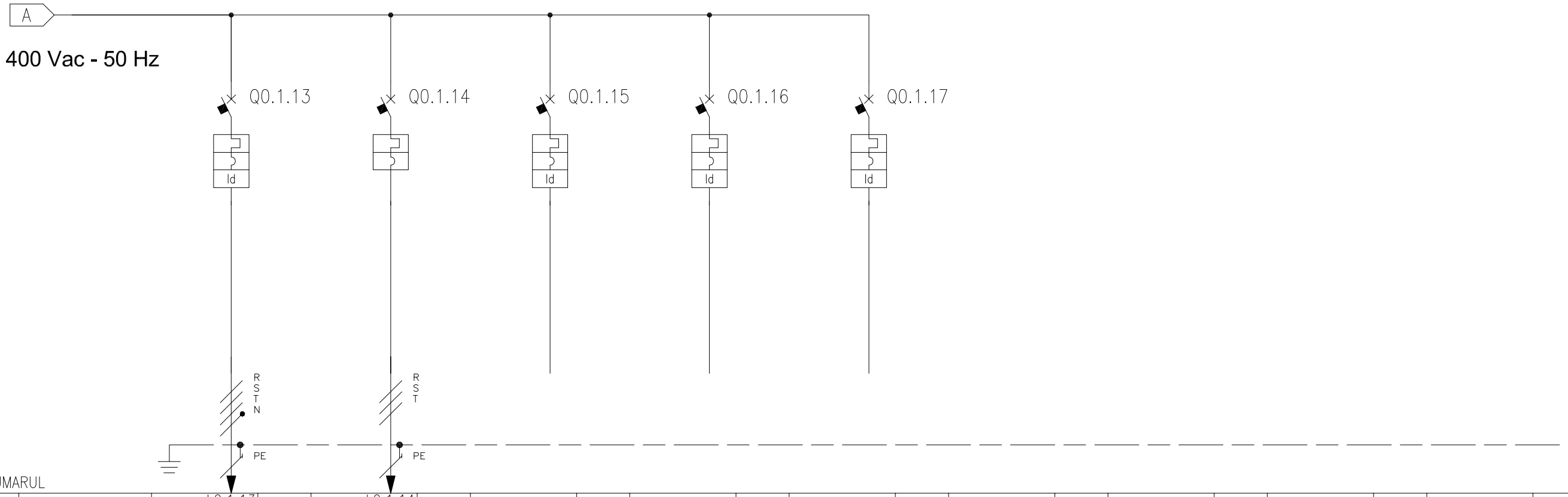
ORDINARY BAR "2" 400 Vac - 50 Hz



			1	2	3	4	5	6	7	8	9
TERMINAL NUMBER/TERMINAL NUMARUL											
NUMBER OF CIRCUIT NUMARUL DE CIRCUIT	DISTRIBUTION DISTRIBUTION		RSTNPE	1	2 RSTNPE	L0.1.2 3 RNPE	L0.1.3 4 SNPE	L0.1.4 5 TNPE	L0.1.5 6 RNPE	L0.1.6 7 SNPE	
DESCRIPTION OF THE CIRCUIT DESCRIREA A CIRCUITULUI			AE1 FROM QMT_PE		RISERVA	AL1 AIR CONDITIONING TELECOM. ROOM 1	AL2 AIR CONDITIONING TELECOM. ROOM 2	AL3 AIR CONDITIONING LV ROOM 1	AL4 AIR CONDITIONING LOCALE BT 2	AL5 AIR CONDITIONING MV ROOM	
TYPE APPARATUS/TIP APARATURA				NSX400 N	C60 L	C60 H	C60 H	C60 H	C60 H	C60 H	
SWITCH/SWITCH	Icu [kA]			50	25	30	30	30	30	30	
	N. POLI	In [A]		4P 400	4P 6	2P 40	2P 40	2P 32	2P 32	2P 32	
	CURVE RELEASES/CURBA DE PRESA			MicroL2.3	C	C	C	C	C	C	
	Ir [A]	tr [s]		144 0,9x	6	40	40	32	32	32	
	Isd [A]	tsd [s]		1440 10x	60	400	400	320	320	320	
	Ii [A]										
	Ig [A]	tg [s]									
DIFFERENTIAL DIFERENTIAL	TYPE/TIP	CLASS/CLASA				Vigi AC	Vigi AC	Vigi AC	Vigi AC	Vigi AC	
	Idn [A]	tdn [ms]				0,03 instant.	0,03 instant.	0,03 instant.	0,03 instant.	0,03 instant.	
CONTACTOR	TYPE/TIP	CLASS/CLASA									
CONTACTOR	COIL [V]	N. POLE In [A]									
TERMIC	TYPE/TIP	Irth [A]									
FUSE	N.POLE	In [A]									
OTHER APP.	TYPE/TIP	MODEL									
PIPELINE/ PIPELINE	TYPE ISOLATION	POSE/INSTALAREA	EPR 13			EPR 13	EPR 13	EPR 13	EPR 13	EPR 13	
	SECTION PHASE-N-PE/PEN [mmq]		1x240 1x240 1x240			1x16 1x16 1x16	1x6 1x6 1x6	1x10 1x10 1x10	1x10 1x10 1x10	1x10 1x10 1x10	
	Ib [A]	Iz [A]	131,9 634			28 115	28 63	16,9 86	16,9 86	16,9 86	
	Un [V]	Pn [kW]	400			230 5,8	230 5,8	230 3,5	230 3,5	230 3,5	
BOTTOM LINE/ FUND LINE	Icc min [kA]	Icc max [kA]	7,8 9,8			2,5 4,9	1,1 2,7	2,1 4,5	2,1 4,5	2,1 4,5	
	LENGHT/LUNGIMEA[m]	dV TOTAL [%]	5 0			20 0,7	20 1,7	15 0,5	15 0,5	15 0,5	
NOTE											



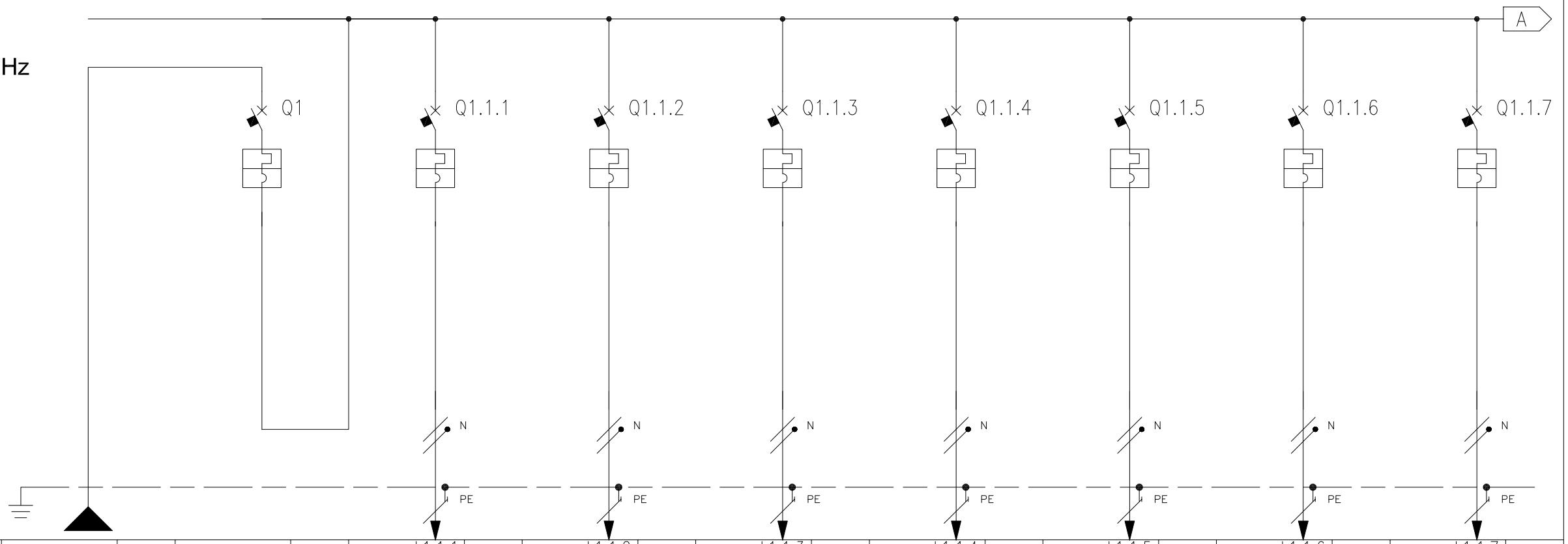
TERMINAL NUMBER/TERMINAL NUMARUL			1		2		3		4		5		6		7		8		9	
NUMBER OF CIRCUIT / NUMARUL DE CIRCUIT	DISTRIBUTION / DISTRIBUTION		8	RSTNPE	L0.2.1 9	TNPE	L0.2.2 10	TNPE	L0.2.3 11	RNPE	L0.1.8 12	RNPE	L0.1.9 13	RSTNPE	L0.1.10 14	RSTNPE	L0.1.11 15	RSTNPE	L0.1.12 16	RSTNPE
DESCRIPTION OF THE CIRCUIT / DESCRIREA A CIRCUITULUI			AL6 DIFFERENTIAL FANS		9 FAN 1 TRANSF. ROOM		10 FAN 2 TRANSF ROOM		11 FAN 3 TRANSF. ROOM		AL7 OUTDOOR LIGHTING SUBSTATION		AL8 SAFE AREA LIGHTING 1		AL9 SAFE AREA LIGHTING 2		AL10 ROAD LAMP LIGHTING		AL11 POWER SUPPLY IS DEVICES	
TYPE APPARATUS/TIP APARATURA			C60 L		NG125 LMA		NG125 LMA		NG125 LMA		C60 H		C60 L		C60 L		C60 L		NG125 N	
SWITCH/SWITCH	Icu [kA]		25		100		100		100		30		25		25		25		25	
	N. POLI	In [A]	4P	6	2P	6.3	2P	6.3	2P	6.3	2P	32	4P	32	4P	32	4P	32	4P	100
	CURVE RELEASES/CURBA DE PRESA		C		MA		MA		MA		C		C		C		C		C	
	Ir [A]	tr [s]	6								32		32		32		32		100	
	Isd [A]	tsd [s]	60		76		76		76		320		320		320		320		1000	
	Ii [A]																			
	Ig [A]	tg [s]																		
DIFFERENTIAL / DIFERENTIAL	TYPE/TIP	CLASS/CLASA	Vigi	A si							Vigi	AC	Vigi	AC	Vigi	AC	Vigi	AC	Vigi	A si
	Idn [A]	tdn [ms]	0,03	instant.							0,03	instant.	0,03	instant.	0,03	instant.	0,03	instant.	0,3	instant.
CONTACTOR	TYPE/TIP	CLASS/CLASA			LC1D09	AC1	LC1D09	AC1	LC1D09	AC1	LC1D09	AC1	LC1D09	AC1	LC1D09	AC1	LC1D09	AC1		
CONTACTOR	COIL [V] / N. POLE	In [A]			230 / 3 pole	25	230 / 3 pole	25	230 / 3 pole	25	230 / 3 pole	25	230 / 4 pole	25	230 / 4 pole	25	230 / 4 pole	25		
TERMIC	TYPE/TIP	Irth [A]																		
FUSE	N.POLE	In [A]																		
OTHER APP.	TYPE/TIP	MODEL																		
PIPELINE/ PIPELINE	TYPE ISOLATION	POSE/INSTALAREA			EPR	13	EPR	13	EPR	13	EPR	13	EPR	13	EPR	13	EPR	13	EPR	11
	SECTION PHASE-N-PE/PEN [mmq]				1x2,5 / 1x2,5	1x2,5	1x2,5 / 1x2,5	1x2,5	1x2,5 / 1x2,5	1x2,5	1x2,5 / 1x2,5	1x2,5	1x16 / 1x16	1x16	1x16 / 1x16	1x16	1x16 / 1x16	1x16	1x16 / 1x16	1x16
	Ib [A]	Iz [A]			1,5	36	1,5	36	1,5	36	0,5	37	3,9	107	3,9	107	1,6	107	82,5	107
	Un [V]	Pn [kW]			230	0,33	230	0,33	230	0,33	230	0,1	400	2,4	400	2,4	400	1	400	40
BOTTOM LINE/ FUND LINE	Icc min [kA]	Icc max [kA]			0,4	1	0,4	1	0,4	1	0,2	0,5	0,7	2	0,5	1,5	0,2	0,6	3	6,4
	LENGHT/LUNGIMEA[m]	dV TOTAL [%]			25	0,3	25	0,3	25	0,3	50	0,2	90	0,2	120	0,3	320	0,3	15	0,6
NOTE																				



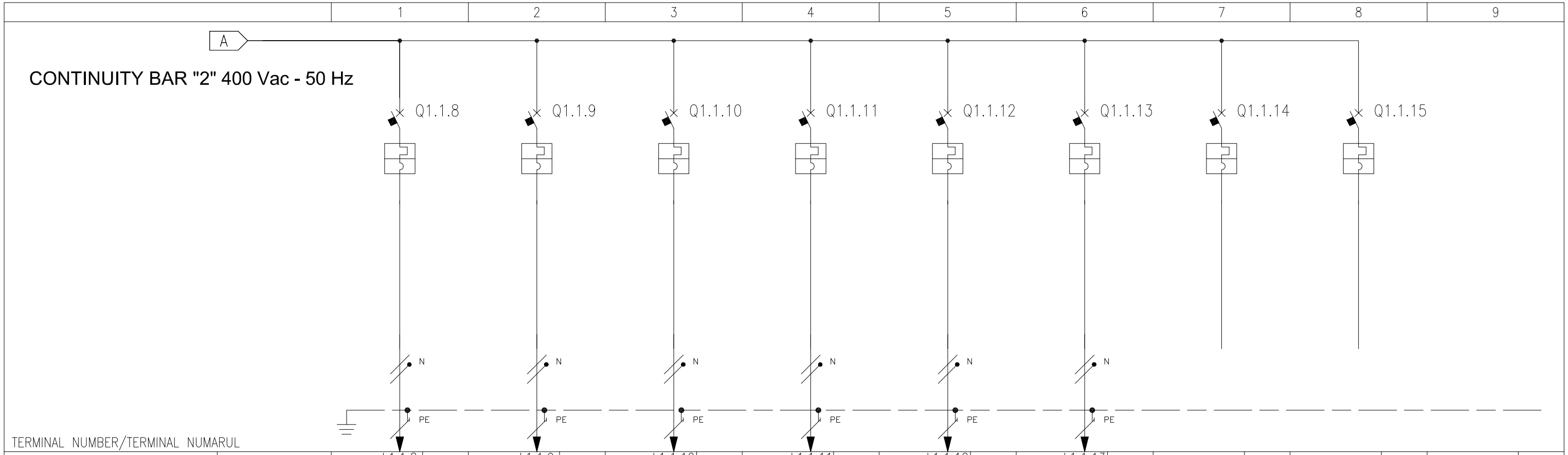
ORDINARY BAR "2" 400 Vac - 50 Hz

			1	2	3	4	5	6	7	8	9
TERMINAL NUMBER/TERMINAL NUMARUL			L0.1.13	L0.1.14							
NUMBER OF CIRCUIT NUMARUL DE CIRCUIT	DISTRIBUTION DISTRIBUTION		17 RSTNPE	18 RSTPE	19 RSTNPE	20 RSTNPE	21 RSTNPE				
DESCRIPTION OF THE CIRCUIT DESCRIREA A CIRCUITULUI			AL12 POWER SUPPLY UPS AUX	AL13 POWER FACTOR CORRECTION PANEL 2	RESERVE	RESERVE	RESERVE				
TYPE APPARATUS/TIP APARATURA			NG125 N	NG125 N	C60 L	C60 L	C60 L				
SWITCH/SWITCH	Icu [kA]		25	25	25	25	25				
	N. POLI	In [A]	4P 50	3P 80	4P 10	4P 10	4P 10				
	CURVE RELEASES/CURBA DE PRESA		C	D	C	C	C				
	Ir [A]	tr [s]	50	80	10	10	10				
	Isd [A]	tsd [s]	500	1120	100	100	100				
	Ii [A]										
	Ig [A]	tg [s]									
DIFFERENTIAL DIFERENTIAL	TYPE/TIP	CLASS/CLASA	Vigi AC		Vigi A si	Vigi A si	Vigi A si				
	Idn [A]	tdn [ms]	0,03 instant.		0,03 instant.	0,03 instant.	0,03 instant.				
CONTACTOR	TYPE/TIP	CLASS/CLASA									
CONTACTOR	COIL [V] N. POLE	In [A]									
TERMIC	TYPE/TIP	Irth [A]									
FUSE	N.POLE	In [A]									
OTHER APP.	TYPE/TIP	MODEL									
PIPELINE/ PIPELINE	TYPE ISOLATION	POSE/INSTALAREA	EPR 13	EPR 13							
	SECTION PHASE-N-PE/PEN [mmq]		1x35 1x35 1x16	1x25 1x16							
	Ib [A]	Iz [A]	42,3 176	58,4 141							
	Un [V]	Pn [kW]	400	400							
BOTTOM LINE/ FUND LINE	Icc min [kA]	Icc max [kA]	6,4 9,1	5,6 8							
	LENGHT/LUNGIMEA[m]	dV TOTAL [%]	5 0,1	10 0,3							
NOTE											

CONTINUITY BAR "2" 400 Vac - 50 Hz

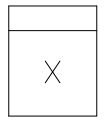
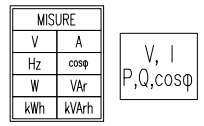
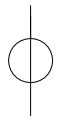
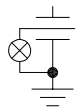


			1		2		3		4		5		6		7		8		9																
TERMINAL NUMBER/TERMINAL NUMARUL																																			
NUMBER OF CIRCUIT NUMARUL DE CIRCUIT	DISTRIBUTION DISTRIBUTION			RSTNPE	1		L1.1.1 2	RNPE	L1.1.2 3	SNPE	L1.1.3 4	TNPE	L1.1.4 5	RNPE	L1.1.5 6	SNPE	L1.1.6 7	TNPE	L1.1.7 8	RNPE															
DESCRIPTION OF THE CIRCUIT DESCRIREA A CIRCUITULUI			AE1 FROM UPS				ALC1 SUPERVISION SERVER SUPPLY 2		ALC2 SERVER EMERGENCY PHONES IPBOX 2		ALC3 POWER SUPPLY EMERG. SUBSTATION		ALC4 SOCKETS TELECOM ROOM		ALC5 SERVER PCA VIDEO ANALISYS 2		ALC6 TELECAMERAS TELECOM ROOM		ALC7 DEVICES GSM/UMTS 2															
TYPE APPARATUS/TIP APARATURA					NG125 N		C60 L		C60 L		C60 L		C60 L		C60 L		C60 L		C60 L																
SWITCH/SWITCH	Icu [kA]				25		50		50		50		50		50		50		50																
	N. POLI	In [A]			4P	63	2P	10	2P	10	2P	10	2P	10	2P	10	2P	10	2P	25															
	CURVE RELEASES/CURBA DE PRESA				C		C		C		C		C		C		C		C																
	Ir [A]	tr [s]			63		10		10		10		10		10		10		25																
	Isd [A]	tsd [s]			630		100		100		100		100		100		100		250																
	Ii [A]																																		
	Ig [A]	tg [s]																																	
DIFFERENTIAL DIFERENTIAL	TYPE/TIP	CLASS/CLASA																																	
	Idn [A]	tdn [ms]																																	
CONTACTOR	TYPE/TIP	CLASS/CLASA																																	
CONTACTOR	COIL [V]	N. POLE	In [A]																																
TERMIC	TYPE/TIP	Irth [A]																																	
FUSE	N.POLE	In [A]																																	
OTHER APP.	TYPE/TIP	MODEL																																	
PIPELINE/ PIPELINE	TYPE ISOLATION	POSE/INSTALAREA					EPR	13	EPR	13	EPR	13	EPR	13	EPR	13	EPR	13	EPR	13															
	SECTION PHASE-N-PE/PEN [mmq]						1x2,5	1x2,5	1x2,5	1x2,5	1x2,5	1x2,5	1x2,5	1x2,5	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x6	1x6	1x6						
	Ib [A]	Iz [A]					3,3	37	5,7	37	2,9	36	5,4	49	6,7	50	5,4	49	6,7	64															
	Un [V]	Pn [kW]					230	0,5	230	0,85	230	0,6	230	1	230	1	230	1	230	1															
BOTTOM LINE/ FUND LINE	Icc min [kA]	Icc max [kA]		9,1			0,6	1,6	0,6	1,6	0,4	1	0,6	1,6	1	2,4	0,6	1,6	1,3	3,1															
	LENGHT/LUNGIMEA[m]	dV TOTAL [%]					15	0,4	15	0,5	25	0,6	25	0,6	15	0,4	25	0,6	15	0,3															
NOTE																																			



TERMINAL NUMBER/TERMINAL NUMARUL																														
NUMBER OF CIRCUIT NUMARUL DE CIRCUIT	DISTRIBUTION DISTRIBUTION		L1.1.8 9		TNPE		L1.1.9 10		TNPE		L1.1.10 11		RNPE		L1.1.11 12		SNPE		L1.1.12 13		SNPE		L1.1.13 14		SNPE		15		RSTNPE		16		RSTNPE		
DESCRIPTION OF THE CIRCUIT DESCRIREA A CIRCUITULUI			ALC8 DEVICES GSM-R STSI 2				ALC9 FIRE PROTECTION CENTRAL 2				ALC10 SUPERVISION MV 2				ALC11 RECTIFIER 2 230Vac/24Vcc				ALC12 AUSILIARY Q_SI				ALC13 AUSILIARY Q_AI				RISERVE				RISERVE				
TYPE APPARATUS/TIP APARATURA			C60 L				C60 L				C60 L				C60 L				C60 L				C60 L				C60 L				C60 L				
SWITCH/SWITCH	Icu [kA]		40				50				50				50				50				50				25				25				
	N. POLI	In [A]	2P		40		2P		10		2P		10		2P		10		2P		10		2P		10		4P		10		4P		10		
	CURVE RELEASES/CURBA DE PRESA		C				C				C				C				C				C				C				C				
	Ir [A]	tr [s]	40				10				10				10				10				10				10				10				
	Isd [A]	tsd [s]	400				100				100				100				100				100				100				100				
	Ii [A]																																		
	Ig [A]	tg [s]																																	
DIFFERENTIAL DIFERENTIAL	TYPE/TIP	CLASS/CLASA																																	
	Idn [A]	tdn [ms]																																	
CONTACTOR	TYPE/TIP	CLASS/CLASA																																	
CONTACTOR	COIL [V]	N. POLE	In [A]																																
TERMIC	TYPE/TIP	Irth [A]																																	
FUSE	N.POLE	In [A]																																	
OTHER APP.	TYPE/TIP	MODEL																																	
PIPELINE/ PIPELINE	TYPE ISOLATION	POSE/INSTALAREA	EPR		13		EPR		13		EPR		13		EPR		13		EPR		13		EPR		13										
	SECTION PHASE-N-PE/PEN [mmq]		1x16	1x16	1x16	1x4	1x4	1x4	1x4	1x4	1x4	1x4	1x16	1x16	1x16	1x2,5	1x2,5	1x2,5	1x2,5	1x2,5	1x2,5													
	Ib [A]	Iz [A]	33,5		119	0,8		50		3,3		50		7,1		119		1,6		37		1,6		37											
	Un [V]	Pn [kW]	230		5	230		0,15		230		0,5		230		1,06		230		0,3		230		0,3											
BOTTOM LINE/ FUND LINE	Icc min [kA]	Icc max [kA]	2,7		5,2	1		2,4		1		2,4		2,7		5,2		0,4		1		0,4		1											
	LENGHT/LUNGIMEA[m]	dV TOTAL [%]	15		0,5	15		0,1		15		0,3		15		0,2		25		0,3		25		0,3											
NOTE																																			

	GENERAL GRAPHIC SIGN TRANSFORMER/GENERAL GRAFIC INSCRIERE TRANSFORMER		ROTARY MACHINE OR SYSTEM WITH ROTARY MACHINE/MASINA ROTATIV SAU SISTEM CU MASINA ROTATIV G = GENERATOR/GENERATOR; M = MOTOR/MOTOARE; GS = SYNCHRONOUS GENERATOR/SINCRON GENERATOR; MS = SYNCHRONOUS MOTOR/MOTOR SINCRON; GE = GENERATING SET/GENERATOR
	TWO WINDING TRANSFORMER WITH SCREEN- ISOLATION TRANSFORMER/TRANSFORMATOR CU DOUĂ ÎNTOARCEREA MONITOR-TRANSFORMER DE IZOLARE		POWER CONVERTER SIGN GRAPHIC GENERAL/CONVERTOR DE PUTERE SEMNUL GRAFIC GENERALE
	CENTRAL WITH SOCKET TRANSFORMER ON A WINDING/transformator CU PRIZA CENTRALE PE O LICHIDAREA		RECTIFIER/RECTIFIER
	THREE-PHASE TRANSFORMER CONNECTIONS STAR TRIANGLE/TRIFAZAT TRANSFORMER CONEXIUNI STAR TRIANGLE		CURRENT CONVERTER IN ALTERNATING/CONVERTOR CURENT N ALTERNANTA (INVERTER)
	TRANSFORMER SECURITY/TRANSFORMATOR SECURITATE		STATIC SWITCH/STATICE SWITCH
	AUTOTRANSFORMER/AUTOTRANSFORMATOR		GATEWAY
	THREE-PHASE TRIANGLE WINDING/LICHIDARE TREI FAZE UN TRIUNGHI		SERIAL NETWORK RS485/SERIAL REŢEA RS485
	TRIANGLE OPEN PHASE WINDING/TRIANGLE OPEN PHASE WINDING OPEN		NETWORK OF LOGIC SELECTIVITY COMMUNICATION/REŢEAUA DE COMUNICARE SELECTIVITĂŢII LOGICĂ
	STAR PHASE WINDING/LICHIDARE TREI FAZE STEA		WIRING DEVICES FOR PROTECTION/CABLARE DISPOZITIVE DE PROTECŢIE
	THREE PHASE STAR WIND WITH NEUTRAL ACCESSIBLE BY EXTERNAL/LICHIDARE TREI FAZE STEA CU NEUTRU ACCES EXTERNE		
	THREE-PHASE WINDING AT ZIG-ZAG/LICHIDARE TREI FAZE ZIG-ZAG		

	MULTI-POSITION SWITCH/SWITCH MULTI-POZIŢII		RECORDER INSTRUMENT (COUNT, X = MEASURED QUANTITY, ES. KWH POWER)/INSTRUMENTUL RECORDER (COUNT, X = CANTITATEA MĂSURATĂ, ES. KWH DE ENERGIE)
	WATCH GENERAL GRAPHIC SIGN/WATCH SEMNUL GRAFIC GENERALE		INSTRUMENTS (X = MEASURED QUANTITY, ES. V VOLTAGE)/INSTRUMENTE (X = CANTITATEA MĂSURATĂ, ES V TENSIUNE)
	TWILIGHT/		MEASURING INSTRUMENT (MULTIMETER OR OTHER DEVICE)/INSTRUMENTE (METER SAU A ALTUI DISPOZITIV)
	PRESSURE TO SERVE THE CELL (X) THE BIN (N)/SENSOR DE PRESIUNE PENTRU A SERVI CELL (X) BIN (N)		TRANSFORMER CURRENT "TA"/TRANSFORMATOR DE CURENT "TA"
	ACCUMULATOR BATTERY OR FLEECE/ACUMULATOR BATERIE SAU LÂNĂ		CURRENT TRANSFORMERS 2 SECONDARY WINDINGS, EACH ON THEIR MAGNETIC CIRCUIT/TRANSFORMATOARE DE CURENT 2 ÎNFĂŞURĂRI SECUNDARE, FIECARE PE CIRCUITUL ACESTORA MAGNETIC
	DIVIDER FOR INDICATOR POWER/DIVIZOR PENTRU INDICATOR DE PUTERE		

	CLOSING CONTACT (OPEN TO REPOSE)/CONTACT DE INCHIDERE (DESCHIS LA REPAUS)		CLOSING CONTACT SENSITIVE TO TEMPERATURE/CONTACT DE ÎNCHIDEREA SENSIBILE LA TEMPERATURA
	OPENING CONTACT (OPEN TO REPOSE)/CONTACT DE DESCHIDERE (DESCHIS LA REPAUS)		CLOSING CONTACT TO THERMIC RELAY/CONTACT DE ÎNCHIDERE DE RELEU TERMICE
	CONTACT EXCHANGE WITH MOMENTARY INTERRUPTION/DATE DE SCHIMB CU ÎNTRERUPERILOR MOMENTANE		THREE-WAY SWITCH/TREI-WAY SWITCH
	CONTACT A TWO-WAY THREE POSITIONS WITH CENTRAL POSITION OPENING/DATE DE A DOUA-WAY TREI POZIŢII, CU DESCHIDERE POZIŢIE CENTRALĂ		TWO-WAY SWITCH/DOUĂ-WAY SWITCH
	CLOSING CONTACT WITH MANUAL DRIVE/CONTACT DE INCHIDERE CU COMANDA MANUAL		TWO-WAY SWITCH AT THREE POSITIONS WITH CENTRAL POSITION OPENING/DOUĂ -WAY SWITCH TREI POZIŢII CU DESCHIDERE POZIŢIE CENTRALĂ
	CLOSING CONTACT WITH CONTROL BUTTON/CONTACT DE INCHIDERE CU BUTONUL DE CONTROL		CONTACT N.A.-N.C. TIMED TO ACTION/CONTACT N.A-N.C. CRONOMETRAT PENTRU A ACŢIUNE
	OPENING CONTACT WITH CONTROL BUTTON/CONTACT DE DESCHIDERE CU BUTONUL DE CONTROL		CONTACT N.A.-N.C. THE TIMED RELEASE/CONTACT N.A.-N.C.CRONOMETRAT PENTRU A ELIBERAREA
	CLOSING CONTACT WITH CONTROL ROD/CONTACT DE INCHIDERE CU COMANDA ROD		
	CLOSING CONTACT WITH ROTARY CONTROL/CONTACT DE INCHIDERE CU CONTROL ROTATIV		
	CLOSING POSITION CONTACT/POZIŢIA DE CONTACT DE INCHIDERE		
	OPENING POSITION CONTACT/POZIŢIA DE CONTACT DE DESCHIDERE (LIMIT/LIMITA)		
	EXCHANGE CONTACT WITHOUT INTERRUPTION/CONTACT DE SCHIMB FĂRĂ ÎNTRERUPERE		

COM	INTERFACE MODULE FOR CONNECTING A SYSTEM OF SUPERVISION/MODULUL DE INTERFATA PENTRU CONECTAREA UNUI SISTEM DE SUPRAVEGHERE		LOCK KEY/BLOCAREA CHEIE: WITH INDICATION FREE KEY–TOSWITCH–SWITCH OPEN–EXTRACT/CU EXPUNE LIBERTATEA CHEIE DE SWITCH– SWITCH DESCHIS–EXTRACTUL WITH INDICATION FREE KEY–TOSWITCH–SWITCH CLOSED/CU EXPUNE LIBERTATEA CHEIE DE SWITCH–SWITCH INSCHIS
M S A	INDICATION SWITCH TYPE/INDICAŢIE SWITCH TIP: (M) MODULAR/MODULARE (D) BOXED/BOXED (A) OPEN/DESCHIS		RINGED KEYS/CHEI INELAT
27G 27S	DIFFERENTIAL INDICATION OF TYPE AC (GENERAL OR SELECTIVE)/PRECIZAREA DIFERENTIAL DE TIPULUI AC (GENERALA SAU SELECTIV)		DEVICE OF OPERATION AND CONTROL OF REMOVABLE TYPE/DISPOZITIV DE FUNCŢIONAREA ŞI CONTROLUL DE TIP AMOVIBIL
27G 27S	DIFFERENTIAL INDICATION OF TYPE A (GENERAL OR SELECTIVE)/PRECIZAREA DIFERENTIAL DE TIPULUI A (GENERALA SAU SELECTIV)		MECHANICAL INTERLOCK BETWEEN DEVICES (UNLESS OTHERWISE INDICATED)/CONECTARE MECANICĂ ÎNTRE DISPOZITIVE (CU EXCEPŢIA CAZULUI NU ESTE INDICAT)
27G 27S	DIFFERENTIAL INDICATION OF TYPE B (GENERAL OR SELECTIVE)/PRECIZAREA DIFERENTIAL DE TIPULUI B (GENERALA SAU SELECTIV)		GROUNDING BARS SIGN WITHOUT POWER TO CLOSING/SEMNAL DE IMPAMANTAREA FĂRĂ PUTERE LA INCHIDE
	CONTROL COIL GENERAL SYMBOL/BOBINĂ DE CONTROL GENERAL SIMBOLUL	I x L x L I x	AUXILIARY SWITCH SIGNALS LEGEND (X)/SWITCH AUXILIARE LEGENDA MESAJE (X): –I/O DEVICE CONNECTED/DISCONNECTED, A/C DEVICE OPEN/CLOSED; SR RELAY TRIPPED; M SOFT STATE –I /O DISPOZITIV CONECTAT/DECONECTAT, A/C DISPOZITIV ÎNCHIS/DESCHIS; SRRELAY DECLANŞAT; M STAT
X	CONTROL COIL (IE=OPENING COIL YO, YC=CLOSING COIL, YUO=COIL A POWER FAILURE)/BOBINĂ DE CONTROL(IE=BOBINĂ DESCHISE YO, YC=BOBINĂ INCHIDERE, YUO=BOBINĂ PANĂ DE CURENT)	X	LAMP (X = COLOR) FOR SWITCHES WITH MEANING OF COLORS: RED RD=(OPEN), GN=GREEN (CLOSED) YE=YELLOW (TRIP), BU=Blue (connected/disconnected), WH=WHITE (springs charged) ; OG=ORANGE LAMPĂ (X = COLOR) pentru switch–uri cu sensul de culori: ROŞU RD = (DESCHIS), GN = VERDE (ÎNCHIS) YE = GALBEN (TRIP), BU = Albastru (conectat / deconectat), WH = ALB (izvoare perceput) ; OG = ORANGE
	FREE RELEASE MECHANISM/MECANISMUL ELIBERAREA GRATUIT		FLASHING SIGNAL LAMP/LAMPĂ DE SEMNALIZARE INTERMITENT
M	MOTOR FOR CONTROL SWITCH/MOTOR PENTRU CONTROL SWITCH		CROSS LAMP SWITCH STATE SIGNAL/LAMPĂ CRUCEA SEMNAL DE STAT SWITCH
TX/RX FO/Cu	CONVERTER COPPER–FIBER OPTICS FOR SELECTIVITY LOGIC (TX TRANSMITTER, RECEIVER RX)/CONVERTOR CUPRU –FIBRA OPTICA PENTRU LOGICA SELECTIVITATEA (TX TRANSMITTER, RECEPTOR RX		

	SWITCH (POWER)/SWITCH (PUTERE)	X	RELAY OF MEASURING OR SIMILAR DEVICE WITH INDICATION OF SECURITY FEATURES ENABLED IN ANSI CODES/RELEU PENTRU DISPOZITIV DE MĂSURARE SAU SIMILARE CU INDICAŢIE DE CARACTERISTICI DE SECURITATE ESTE ACTIVAT ÎN CODURI ANSI
	SWITCH WITH BUILT-IN FUSE/SWITCH CU BUILT-IN FUSE		THERMAL RELAY/RELEU TERMIC
	POWER SWITCH FOR AUTOMATIC OPENING/BUTONUL DE PORNIRE DESCHIDEREA AUTOMATĂ		RELAY MAGNETIC/RELEU MAGNETIC
	POWER SWITCH OPENING AUTOMATIC, THERMIC/BUTONUL DE PORNIRE DESCHIDEREA AUTOMATĂ. TERMICE	Id	CURRENT DIFFERENTIAL RELAY/RELEU CURENT DIFERENTIAL
	POWER SWITCH OPENING AUTOMATIC, MAGNETOTHERMIC/BUTONUL DE PORNIRE DESCHIDEREA AUTOMATĂ. MAGNETOTERMICE	I >	OVERCURRENT RELAY (LONG DELAY)/RELEU SUPRACURENT (ÎNTÂRZIERII PRELUNGITE)
	POWER SWITCH FOR AUTOMATIC OPENING, DIFFERENTIAL MAGNETOTHERMIC/COMUTATORUL DE ALIMENTARE TIMP DESCHIDEREA AUTOMATĂ, DIFERENŢIAL MAGNETO TERMICE	I>>	OVERCURRENT RELAY (SHORT DELAY)/RELEU SUPRACURENT (SCURTĂ ÎNTÂRZIERE)
	POWER SWITCH FOR AUTOMATIC OPENING, WORKING FOR CURRENT DIFFERENTIAL/COMUTATORUL DE ALIMENTARE TIMP DESCHIDEREA AUTOMATĂ, LUCRU PENTRU DIFERENTIAL CURENT	I ⏚	EARTH FAULT RELAY/RELEU FAULT PĂMÂNTULUI
	POWER SWITCH AT AUTOMATIC OPENING WITH ADJUSTABLE THERMIC/COMUTATORUL DE ALIMENTARE TIMP DESCHIDEREA AUTOMATĂ CU CĂLDURĂ REGLABIL	U=0	RELAY GROUND FAULT RELAY A LACK OF POWER/RELEU ÎMPĂMÂNTARE RELEU LIPSĂ DE PUTERE
	POWER SWITCH AT AUTOMATIC OPENING REMOVABLE/COMUTATORUL DE ALIMENTARE TIMP DESCHIDEREA AUTOMATĂ AMOVIBIL	U<	RELAY UNDERVOLT/RELEU UNDERVOLT
		M D / SG/EL	PROTECTION TRIP UNITS ELECTRIC UNIT OF MEASURE (M) AND DIALOGUE (D)/ ÎMPIEDICAT DE UNITATI ELECTRICE CU UNITATEA DE MASURA (M) ŞI DIALOG (D)

	DISCONNECTOR/SEPARATOR		CONTACTOR (CLOSING CONTACT)/CONTACTOR (CONTACT DISCHIS)
	DISCONNECTOR WITH BUILT-IN FUSE/SEPARATOR CU BUILT-IN FUSE		CONTACTOR AUTOMATIC OPENING (ASSOCIATED TO A RELAY PROTECTION)/CONTACTOR AUTOMAT DESCHISE (CONEXE A RELEU DE PROTECŢIE)
	DISCONNECTOR TO MANUAL DRIVE WITH BLOCKING DEVICE/SEPARATOR LA MANUALĂ CU DISPOZITIV DE BLOCARE		CONTACTOR (OPENING CONTACT)/CONTACTOR (CONTACT INCHIS)
	TWO-WAY DISCONNECTOR THREE POSITIONS, WITH CENTRAL POSITION OPENING/DOUĂ -WAY SEPARATOR TREI POZIŢII, CU DESCHIDERE POZIŢIE CENTRALĂ		CONTACTOR AUTOMATIC OPENING WITH FUSE, WORKING FOR THERMAL EFFECT/CONTACTOR DESCHIDEREA AUTOMATĂ CU SIGURANŢĂ, LUCRU PENTRU EFECT TERMICĂ
	TWO-WAY DISCONNECTOR THREE POSITIONS, WITH CENTRAL POSITION OPENING/DOUĂ -WAY SEPARATOR TREI POZIŢII, CU DESCHIDERE POZIŢIE CENTRALĂ		
	SWITCH-DISCONNECTORS/ÎNTRERUPTOARE-SEPARATOARE		
	SWITCH-DISCONNECTORS WITH FUSE/ÎNTRERUPTOARE-SEPARATOARE CU FUSE		
	SWITCH-DISCONNECTORS WITH INTEGRATED FUSE/NTRERUPTOARE-SEPARATOARE CU SIGURANŢĂ INTEGRATĂ		
	SWITCH ROTARY DISCONNECTOR/SWITCH COMUTATOR ROTATIV		

	PHASE CONDUCTOR/CONDUCTOR FAZA		RESISTOR/RESISTOR
	NEUTRAL CONDUCTOR/NEUTRU CONDUCTOR		INDUCTORS, COILS, WINDING/INDUCTOARE, BOBINE, LICHIDAREA
	PROTECTION CONDUCTOR/CONDUCTOR DE PROTECŢIE		CAPACITOR GRAPHIC SIGN GENERAL/CAPACITOR GRAFIC GENERAL INSCRIERE
	NEUTRAL CONDUCTOR HAVING EVEN FUNCTION OF PROTECTION CONDUCTOR/CONDUCTORUL NEUTRU AVÂND CHIAR FUNCŢIA DE CONDUCTOR DE PROTECŢIE		GROUND SIGN GRAPHIC GENERAL/SOL INSCRIERE GRAFIC GENERALE
	CONNECTION OF CONDUCTORS/CONEXIUNE DE CONDUCTORI		MASS (FRAME)/MASA (FRAME)
	TERMINAL OR JACK/TERMINAL SAU CLAMP		LAND OF PROTECTION/TEREN DE PROTECŢIE
	EXAMPLE DERIVATION/DERIVATIE EXEMPLU		EQUIPOTENTIAL/ECHIPOTENŢIALĂ
	PIPELINE IN RAIL PROTECTED/CONDUCTE IN PROTEJATE BEAM		FUSE GENERAL SIGN/FUSE GENERALE INSCRIERE
	JUNCTION OF CONDUCTOR/JUNCTION DE CONDUCTOR		FUSE WITH STRIKER/FUSE CU PERCUTOR
	SOCKET PLUG (MALE AND FEMALE)/PRIZA (MASCULIN ŞI FEMININ)		FUSE With striker AND SEPARATE CIRCUIT SIGNAL/FUSE CU PERCUTOR ŞI SEMNALUL DE CIRCUIT SEPARAT
	TOROID FOR DIFFERENTIAL CIRCUIT-HOMOPOLAR/TOROID PENTRU UN CIRCUIT DE DIFERENTIAL-HOMOPOLARE		UNLOADER/DESCĂRCĂTOR